

CLAIMS:

1. A method for removing contaminant particles (14), such as atoms, molecules, clusters, ions and the like, produced by means of a radiation source (10) during generation of short-wave radiation (12) having a wavelength of up to approximately 20 nm, by means of a first gas (22) guided at high mass throughput between the radiation source (10) and a particle trap (20) arranged in a wall (16) of a mirror chamber (18), characterized in that a second gas (24) is introduced into the mirror chamber (18) and in that its pressure is adjusted such that it is at least as high as the pressure of the first gas (22).
- 10 2. The method according to claim 1, characterized in that the pressure of the second gas (24) is adjusted such that it is higher than the pressure of the first gas (22).
- 15 3. The method according to claim 1 or 2, characterized in that the first gas (22) is guided transversely to the propagation direction of the radiation (12) in a channel (26) that is at least partially laterally bounded.
- 20 4. The method according to one of the claims 1 to 3, characterized in that a noble gas having an atomic weight of at least 39 g/mol, for example, argon or krypton, is used as a first gas (22).
5. The method according to one of the claims 1 to 4, characterized in that a substance that is substantially transparent for the radiation (12), for example, helium or hydrogen, is introduced as a second gas (24).

6. The method according to one of the claims 1 to 5, characterized in that a

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flow velocity of the first gas (22) and/or of the second gas (24) is adjustable by means of appropriate devices (P, P', 28, 28').

7. A device for removing contaminant particles (14), such as atoms, molecules, clusters, ions and the like, produced by means of a radiation source (10) during generation of short-wave radiation (12) having a wavelength of up to approximately 20 nm, by means of a first gas (22) that is guidable at high mass throughput between the radiation source (10) and a particle trap (20) arranged in a wall (16) of a mirror chamber (18), characterized in that a second gas (24) is introducible 10 into the mirror chamber (18) whose pressure is adjustable with suitable devices (28, 28', P, P') to be at least as high as the pressure of the first gas (22).

8. The device according to claim 7, characterized in that the pressure of the second gas (24) is adjustable by means of the devices (28, 28', P, P') to be higher than 15 the pressure of the first gas (22).

9. The device according to claim 7 or 8, characterized in that the first gas (22) is guidable transversely to the propagation direction of the radiation (12) by a channel (26) that is at least partially laterally bounded.

20 10. The device according to one of the claims 7 to 9, characterized in that the first gas (22) is a noble gas having an atomic weight of at least 39 g/mol, for example, argon or krypton.

25 11. The device according to one of the claims 7 to 10, characterized in that the second gas (24) is a substance that is essentially transparent for the radiation (12), for example, helium or hydrogen.

12. The device according to one of the claims 7 to 11, characterized in that a 30 flow velocity of the first gas (22) and/or of the second gas (24) is adjustable by means of appropriate devices (P, P', 28, 28').

13. Litography projection apparatus comprising a device according to at least one of the claims 7 to 12.
- 5 14. The use of the method according to one of the claims 1 to 6 or of the device according to one of the claims 7 to 12, for generating radiation (12) in a wavelength range of approximately 2 nm up to approximately 20 nm for a lithography device.
- 10 15. The use of the method according to one of the claims 1 to 6 or of the device according to one of the claims 7 to 12, for generating radiation (12) in a wavelength range of approximately 2 nm up to approximately 20 nm for a microscope.